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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/717,854	11/20/2003	Tom Walschap	920522-95141	9483
23644	7590	09/08/2004	EXAMINER	
BARNES & THORNBURG P.O. BOX 2786 CHICAGO, IL 60690-2786			DICKEY, THOMAS L	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 09/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/717,854

Applicant(s)

WALSCHAP ET AL.

Examiner

Thomas L Dickey

Art Unit

2826

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Art Unit: 2826

DETAILED ACTION

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: JP-04343470 is considered pertinent because it is incorporated by reference into FURUMIYA 5,844,290.

Oath/Declaration

2. The oath/declaration filed on 04/19/2004 is acceptable.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "pixel structure" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered. It is noted that a "pixel structure" is illustrated in prior art drawing 1. Is this the same "pixel structure" applicant intends to claim as part of his invention? If so, applicant should consider claiming his invention as a Jepson style improvement, by including the features illustrated in prior art figure 1 in his preamble.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an

Art Unit: 2826

amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Priority

4. Applicants have made no claim for priority.

Information Disclosure Statement

5. If applicant is aware of any relevant prior art, he/she requested to cite it on form **PTO-1449** in accordance with the guidelines set forth in M.P.E.P. 609.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 2826

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

A. Claims 1,3-6,11-15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by FURUMIYA (5,844,290).

With regard to claims 1 and 3-6 Furumiya discloses a monochrome image sensor device comprising a substrate 1; MOS-based pixel structure 3-4-5-6; and an polymer photoresist anti-reflective coating planarization layer 15-1 and 15-2 provided on top of the pixel structure 3-4-5-6, wherein the pixel structure 3-4-5-6 is either an active or a passive structure. With regard to claims 11-15 Furumiya discloses a method for making a monochrome image sensor device comprising the steps of providing a substrate 1, using MOS-based processing technology to apply a pixel structure 3-4-5-6 on or in the substrate 1, and providing a planarization layer 15-1 and 15-2 on top of the pixel structure 3-4-5-6 by spin coating or dip coating, wherein providing the planarization layer 15-1 and 15-2 comprises providing a stack of films (15-2 stacked on 15-1) having gradually changing refractive indexes. With regard to claim 17 Furumiya discloses a method for improving light impingement on a monochrome image sensor device comprising the steps of providing a planarization layer 15-1 and 15-2 on top of a pixel structure 3-4-5-6 of said image sensor device to avoid a lensing effect, whereby the planarization layer 15-1 and 15-2 is at the same time an anti-reflective coating. Note figure 2, column 2 lines 47-67, and column 2 lines 1-9 and 37-48 of Furumiya.

Art Unit: 2826

B. Claims 1,2, and 6-17 are rejected under 35 U.S.C. 102(b) as being anticipated by FAN et al. (6,482,669).

With regard to claims 1,2 and 6-10, Fan et al. discloses a monochrome image sensor device comprising a substrate 52; a pixel structure (parts 54-62); and an anti-reflective coating planarization layer 47 (part 64 in figure 8A) provided on top of the pixel structure (parts 54-62), wherein the pixel structure (parts 54-62) is either an active or a passive structure, the thickness of said planarization layer 47 and the refractive index of said planarization layer 47 are optimized (to quarter wavelength, note column 8 lines 27-33) to also act as an anti-reflection medium for at least one region of said image sensor device, and wherein said planarization layer 47 comprises of a stack of films (note column 8 lines 40-41) having a “monotone” continuously varying refractive index that gradually changes from the refractive index of material 63 surrounding the sensor device or a value as close as possible to said refractive index of material 63 surrounding the sensor device, to the refractive index of a top layer of said pixel structure (parts 54-62), and said image sensor device further comprises an additional anti-reflective coating 49 (67 in figure 8A) on top of the planarization layer 47. With regard to claims 11-16 Fan et al. discloses a method for making a monochrome image sensor device comprising the steps of providing a substrate 52, applying a pixel structure (parts 54-62) on or in the substrate 52 using MOS-based processing technology, and providing a planarization layer 47 (part 64 in figure 8A) on top of the pixel structure (parts 54-62) by providing a stack of films (note column 8 lines 40-41) having gradually changing

Art Unit: 2826

refractive indexes, by spin coating or dip coating, and providing an anti-reflective coating 49 (67 in figure 8A) on top of the planarization layer 47. With regard to claim 17 Fan et al. discloses a method for improving light impingement on a monochrome image sensor device comprising the steps of providing a planarization layer 47 (part 64 in figure 8A) on top of a pixel structure (parts 54-62) of said image sensor device to avoid a lensing effect, whereby the planarization layer 47 is at the same time an anti-reflective coating. Note figures 5B (option 1), 6B, 8A, and column 8 lines 14-62 and column 9 lines 4-37 of Fan et al.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

Art Unit: 2826

have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLD
08/04


Minhloan Tran
Primary Examiner
Art Unit 2826